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GEOGRAPHICAL RECORD

THE AMERICAN GEOGRAPHICAL SOCIETY

CONGRATULATIONS TO AMUNDSEN. In behalf of the American Geographical Society this cablegram was sent to the explorer Amundsen, by President Huntington, after the announcement that he had attained the South Pole:

"NEW YORK CITY, March 11, 1912.

"ROALD AMUNDSEN, Hobart, Tasmania.

"American Geographical Society congratulates you on brilliant and well earned success. "HUNTINGTON."

MEETING OF THE SOCIETY. A regular meeting of the Society was held at the Engineering Societies' Building, No. 29 W. 39th St., on Tuesday evening, Feb. 20, 1912. Vice-President Greenough in the Chair. The following persons recommended by the Council were elected to Fellowship:

Miss Mary E. Harrington, William B. Beam.

The Chairman then introduced Mura Bayly, F.A.G.S., who addressed the Society on "New Zealand." Lantern views were shown.

NORTH AMERICA

ARIZONA A STATE. President Taft, on Feb. 14, signed the proclamation declaring Arizona to be a State of the Union. The new Commonwealth adds the forty-eighth star to the flag and brings into the sisterhood of States the last bit of territory in the United States, south of Canada.

THE NEW MADRID EARTHQUAKE. Beginning on September 16, 1811, and lasting more than a year, a succession of severe earthquake shocks known as the New Madrid Earthquake, so named from a town now standing on the Mississippi River, occurred in the Central Mississippi Valley, and extended over southeastern Missouri, northeastern Arkansas and western Kentucky and Tennessee. These shocks were not equalled in severity and continuance of disturbance by the famous earthquakes at Charleston and San Francisco. Little attention was paid to the phenomena at the time because the region contained very few white residents. In its scientific aspects, this earthquake may be regarded as a type exhibiting, in unusual detail, the geological effects of great disturbances upon unconsolidated deposits. In this sense its phenomena have much importance and it is gratifying that the U. S. Geological Survey has issued a monograph (*Bulletin* 494, 119 pp., Maps and Ills.) entitled "The New Madrid Earthquake," by Myron L. Fuller, in which the author has brought together, with great care and thoroughness, all the data he has been able to collect concerning the earthquake; and he discusses its details in the light of our present knowledge of seismology. His sources of information were "the quaint, picturesque and graphic accounts of contemporaries, and the equally striking geographical and geological records which even now may be clearly read at many points in the region."

Mr. Fuller says, with regard to the ultimate cause of the earthquake, that, as the center of activity of the primary shocks was within the embayment area and well removed from the surrounding area of consolidated rocks, it seems clear that the ultimate cause lies in forces operating beneath the embayment deposits. The action may be associated either with the processes of folding or warping or incident to a depression and deepening of the basin.

GEOGRAPHY AND AGRICULTURE IN WISCONSIN. In Wisconsin, where an increase of 47 per cent. in the number of cows between 1900 and 1910 was accompanied by so large a production of butter, cheese, and milk that the State now ranks first in the United States, having passed New York, in the value of dairy products, the economists interested in agricultural statistics have been applying geographical methods to the interpretation of their data. One of their reports (H. C. Taylor and C. E. Lee, "Progress of the Dairy Industry in Wisconsin", Wis. Agr. Experiment Sta. *Bull.* 210, June, 1911, pp. 1-30) is illustrated by a series of small maps of the state upon which the grouping of dots in the several counties to show the distribution of cows, hay or corn, creameries, skimming stations, condenseries, and cheese factories, enables one to read graphically the relationships of these agricultural items to the topography and climate, shown in the text in a relief map of the State and a map showing length of growing season.

The text, though mainly concerned with agricultural matters, does not neglect geography, discussing specifically, for example, the relationships of a geographical topic like the nationality of the population. The Swiss are seen from one map to be largely concentrated in one county where the combination of favorable climate, etc., with the knowledge, skill, and imported habits of the Swiss immigrants have evolved 213 cheese factories and of course a great production of Swiss cheese.

The nearness of southern Wisconsin to the Chicago market and direct transportation have naturally affected the great increase in dairy products during the last decade (70 per cent. increase in butter and 86 per cent. increase in cheese), but the maps show that this is a minor control compared with the suitability of topography, soil, and climate for the development of the dairy industry.

LAWRENCE MARTIN.

NORTHERN SELKIRK MOUNTAINS. During June and July, 1911, Mr. Howard Palmer, Secretary of the American Alpine Club, with Professors E. W. D. Holway and Frederic K. Butters of the University of Minnesota, continued his exploration of the region about Mt. Sir Sandford (51°39′ N. and 117°50′ W.) in the northern Selkirk Mts., begun in 1908 and 1909 (cf. *Appalachia,* Vol. 12, No. 1, 1909, pp. 16-30 and *Geogr. Journ.,* Vol. 37, No. 2, 1911, pp. 170-179; both with maps). Detailed investigation was made of the rates of flow and of recession of Sir Sandford Glacier, the results of which will be published as soon as possible. In addition a reconnaissance photo-topographic survey based on instrumental triangulation was made of a considerable area in the unexplored mountainous district included in the "Big Bend" of the Columbia River. The exceedingly irregular crest-line was traced for some twenty-five miles and, except for the gap discovered by Moberly in connection with the Canadian Pacific Railway surveys between 1870 and 1872, no timbered pass leading from the N. W. flowing course of the Columbia to its S. S. E. flowing section was observed. A continuous meteorologic record was kept by means of a portable barograph and minimum and black-bulb thermometers. Altitudes were estimated by aneroid barometer, checked by boiling point thermometer and barograph.

In August the party traversed the valley of the North Fork of the Illecillewaet River to its head and continued their explorations in this vicinity. In all, eight peaks above 9,000 feet were ascended, of which seven were first ascents. The mountains along the divide are heavily glacier-laden and support several extensive névés.

THE CARIBOO MOUNTAINS. Professor J. Norman Collie, of Canada, read before the Alpine Club of London on Dec. 10 last a paper on "On the Canadian Rocky Mountains North of the Yellow Head Pass," which the Grand Trunk Pacific is now making accessible to mountaineers. The region which Prof. Collie describes will before long, undoubtedly, be popular among tourists and mountain climbers. The author says about the Cariboo Mountains, which are just coming into notice:

"We climbed a peak on the east side of the Moose Valley and away to the west beyond Tête Jaune Cache and the Fraser River, I saw for the first time the Cariboo Mountains [a little S. of 54° N. Lat. and E. of 122° W. Long.], and I was surprised to see how fine they were. From many of the Rockies further south I had seen the Selkirk range, but they are not, in my opinion, at all equal to the Cariboo group. Two especially fine peaks could be seen; a great snow field with a grand glacier coming down eastwards towards the Fraser River. This mountain land should prove a great field for the mountaineer. Up to the present, as far as I know, not a white man has ever penetrated into its fastnesses. I have heard stories of how even the most adventurous of prospectors have been turned back. This is not surprising to anyone who has had to deal with dense British Columbia forest. Huge fallen trees, thick underbrush full of that pest the devil's club, turbulent glacier streams, can render a valley quite impassable. Any one who has attempted to reach the high mountains on the west of the watershed either in the Selkirks along the Columbia River or in the Rockies, knows that he will never try again. Possibly, however, when the Grand Trunk Pacific railway has opened up the Fraser Valley, it will be possible to get men who, with two-handed saws and axes, can clear a trail, but both money and time will have to be spent before anyone will win to this magnificent group. It will, though, be well worth accomplishing, for the Cariboo Mountains are certainly as high—perhaps even higher—than the Selkirks; the peaks are finer shaped, and there are some narrow gorges (especially one to the north end of the group) that must afford grand scenery. If what is marked on McEvoy's map be true—namely, that they belong to the Archæan formation—they are certain to possess fine form, for the Archæan rock weathers into the most picturesque details."

MR. RADFORD IN NORTHERN CANADA. Mr. Harry V. Radford writes to the *Bulletin* that he arrived at Spurrell Harbor, mouth of Chesterfield Inlet, with his assistant T. George Street, on Sept. 30, finding there the promised relief supplies landed for him by the Hudson Bay Company's steamer *Pelican* in September. He expected to leave Spurrell Harbor on Oct. 4 to return up Chesterfield Inlet and go with dogs and sledges 270 miles westward to the head of Schultz Lake, where he and Street intended to winter with the Eskimos. They will try to reach the Arctic Coast in the Spring at or east of Bathurst Inlet and proceed inland.

THE GLACIAL GREAT LAKES IN CANADA. Goldthwait, to whom we owe so much of the revival of the study of the glacial Great Lakes by the introduction of detailed instrumental surveys of their abandoned strand lines, has extended his studies, under the direction of F. B. Taylor, from Wisconsin and Michigan to the eastern shore of Lake Huron in Ontario. (Goldthwait, J. W., "An Instrumental Survey of the Shorelines of the Extinct Lakes Algonquin and Nipissing in Southwestern Ontario," Memoir No. 10, Canada Department of Mines, Geological Survey Branch, 1910, pp. 5-48). Measurements were made in 1908 with a wye-level. The Algonquin beaches vary in level at present from about 25 feet above Lake Huron near its outlet to 314 feet at the northernmost locality studied. They are horizontal at the southern end of the lakes (607 feet above sea level), as the Algonquin strands are in southern Lake Michigan, and then slope northeastward at grades of from 1.43 to 3.6 feet to the mile.

The Nipissing shoreline, 15 to 58 feet above Lake Huron, shows a similar, though less marked, deformation with horizontality in the south (596 feet above sea level) and grades of 0.11 to 0.57 feet to the mile. The remarkable agreement of results throughout a wide area around the shores of Lakes Michigan and Huron thoroughly justify the time and expense given to these detailed instrumental observations; and the determination of lack of disturbance in the southern part of the area of these glacier margin lakes makes it possible to use these elevations as planes of reference, subtracting 607 feet from the present altitude of any Algonquin beach and 596 feet from the altitude of any Nipissing beach, to determine the amount of uplift of a region since Algonquin or Nipissing time.

LAWRENCE MARTIN.

SOUTH AMERICA

THE CONTINENTAL WATERSHED OF PATAGONIA. Mr. P. D. Quensel, a member of the Swedish Magellanian Expedition of 1907-1909, spent most of two summers on the eastern slopes of the Patagonian and Fugian Cordillera, chiefly occupied with petrological studies, but noting also the glacial geology of those regions to which he calls attention as offering a wide and interesting field of work. The Society has received a paper by him "On the influence of the Ice Age on the Continental Watershed of Patagonia" (Reprinted from *Bull. Geol. Instit. of Upsala.* Vol 9, pp. 60-92, 2 maps in colors, and 12 ills.), from which his principal conclusions are here summarized. His studies point to the conclusion that the ice-divide, during the ice age, generally followed the Central Cordillera range, though the present watershed, often consisting of glacial deposits, is chiefly situated to the east of the mountains, indicating the limits of the latest Cordilleran glaciation. Until towards the end of the ice age the transandine valleys must have been filled with an ice-barring outlet in that direction and the drainage of the eastern Cordillera must have followed the pre-glacial Pampean valleys to the Atlantic. On account of the slight slope of the transversal valleys the rivers have had but small erosive power and have therefore not been able to cut through the extensive glacial deposits and drain off the lakes, which were hollowed by powerful glacial erosion and are without doubt of great depth.

In preglacial time, low passes of erosion must have existed in many places in the Cordillera. Through ice accumulations in these depressions, the passes may have been lowered by glacial erosion, mighty streams of ice from the central mountains following these depressions both east and west. The western parts of the sub-andine lakes resemble the fiords of mountain regions which were once the seat of glaciation. The marked tendency of many of the fiords of the sub-andine lakes, to stretch in a north-south direction is probably due to the tectonic depressions or faults, caused by the forming of the Cordillera range to which they are parallel.

The author draws attention to the relation between the principal sub-andine lakes and the present inland ice of Patagonia. With a break of only 60 km. a continuous field of ice covers the central Cordillera for over six degrees of latitude from the Kirk Narrows in the Ultima Esperanza district nearly to the pass of the Aisen River. Further north the general appearance of the mountain range changes; though mighty glaciers are still found, the glaciation is of a more local character and confined to the highest mountains. All the large sub-andine lakes are found in the region of the inland ice. All the trans-andine passes of the southern regions have their source from sub-andine lakes, whereas, further north, though the general system is the same, the lakes have been drained off. Even during the glacial period there was evidently a much more limited glaciation in the Cordillera between Nahuel Huapi and Aisen than further to the south, which led to decided differences in the orography of the present day.

MISS ANNIE PECK'S LATEST ASCENT. Miss Peck, who has recently returned from South America, sends to the *Bulletin* this note on her latest ascent:

"I made, last summer, the first ascent of the mountain massif Coropuna, in the coast range of Southern Peru, from the town of Viraco on the south slope. I ascended two peaks, the only ones visible from that side. From their summits, I saw several more farther back, but as there was a gulf between and as it was evident from my hypsometric observations that the elevation of the mountain on which I stood was less than that of Huascarán, I thought it hardly worth while to attempt the others with my very limited resources. I had no Swiss guides and was much pleased at being able to make the ascent on the first trial. Of course, it was far less difficult than Huascarán.

"My companions on the summit of Coropuna were Señor Ricardo Carpio, Peruvian, Mr. Carl Volkmar, German-American, and four Peruvian porters, seven of us altogether."

AFRICA

RHODESIA. The report of the British South Africa Company for the year ending March 31, 1911, announces that the two territories hitherto known as Northeastern and Northwestern Rhodesia will hereafter be administered as one territory under the name of Northern Rhodesia. The progress in farming and ranching in Northern Rhodesia gives much promise for the future of these industries. A large area is suitable for cotton and the prospects of cattle raising are excellent. The rapid development of the mineral district in Katanga, Belgian Congo, has made a good market for all kinds of farm produce, and Rhodesian farmers are now able to reach this market by the extension of the Rhodesian railroad to Elizabethville in this mining region. In the whole of Rhodesia the European population has increased by more than 87 per cent. since the census of 1904. In the past year, 330,000 acres of land were sold, the gold output was $13,239,480, the net receipts of the railroads showed an increase of $1,270,000, and the gross imports, an increase of $2,850,000 over the previous year.

COTTON GROWING IN NORTHERN NIGERIA. The Governor of Northern Nigeria says in the *Annual Report* on the Protectorate for the year ending March 31, 1911, that strenuous efforts are being made to encourage the natives to grow cotton on a large scale. Experimental plots have been established at various centers. As soon as the natives begin to realize that cotton is a crop for which there is always a ready sale to an unlimited extent they will embark largely in its cultivation. The Governor believes that, under proper guidance, there will be a steady and continuous increase of production. The people have for centuries grown cotton and have little to learn as regards methods of cultivation. The present problem is the improvement of the local varieties of cotton and the discovery of the means to increase the productivity of the plants. He thinks that the prospects of cotton growing on a large scale are especially promising in the fertile lands bordering on the Niger and Benue.

ASIA

THE NEW CAPITAL OF INDIA. *The London Times* (Weekly edition, Feb. 9, 1912), says that Parliament will be asked to give statutory authority to the Government of India Bill which will declare Delhi to be the capital of India and will authorize the constitution of that city and a defined area around it into an Imperial *enclave*. The *enclave* will cover an area of over 180 square miles, most of it taken from the Delhi Division of the Punjab.

THE METRIC SYSTEM IN JAPAN. The Decimal Association, Great Britain, announces that the King of Siam, on Nov. 15 last, ordered the adoption of the metric system throughout that kingdom. The Siamese authorities have taken steps to procure from the Bureau Internationale des Poids et Mésures, in France, standards and prototypes for furnishing a Central Office of Weights and Measures in the kingdom. The system will be introduced in about a year and, twelve months later, the law will be enforced throughout Siam.

AUSTRALASIA AND OCEANIA

MATAVANU VOLCANO QUIESCENT. Dr. K. Sapper reports (*Zeitsch. Gesell. f. Erdk. zu Berlin,* 1911, No. 10, pp. 701-704) that the activity of Matavanu, in the island of Savaii, Samoa, has ceased. Dr. Grevel wrote to him, on Aug. 15, 1911, that for a month the lava flow into the sea had stopped, that a hard smooth surface covered the lava lake and further outbreaks seemed improbable. In October, Father Mennel wrote that since the end of August the volcano had the appearance of being extinct. Its activity had been gradually decreasing for about nine months, and it is deemed probable that a long period of quietude will now ensue. The outbursts began in August, 1905. A crater opened in a valley from whose outpourings a new volcano was built up to a height of 2,000 feet, obliterating the valley, which became a huge ridge about 1,500 feet high. About 30 square miles were covered with lava, the flow over a considerable area exceeding 1,000 feet in thickness. A part of the sea, between the shore and the coral reef, was filled with the ejecta. The eruptions were very violent throughout 1906, and also at various periods since then. Dr. Sapper urges that persons competent to make a careful study of the phenomena of the Matavanu eruptions should be sent to Savaii.

POLAR

ICE CONDITIONS IN THE ARCTIC SEAS IN 1911. The annual "Isforholdene i de arktiske Have" for 1911, published by the Danish Meteorological Institute, has appeared with Danish and English text in parallel columns as usual. The data received from Bering and Beaufort Seas, Bering Strait and Kara Sea were too inadequate to give much idea of the state of the ice in those regions. There was an unusual amount of ice in the Greenland Sea and in April and May the ice boundary extended from the east coast of Iceland to the east of Jan Mayen. About June 15, however, vessels had no difficulty in reaching Angmagsalik, the Danish port in East Greenland. The five accompanying maps show the ice conditions as far as known for the months of April-August.

PHYSICAL GEOGRAPHY

THE SALINITY OF THE ATLANTIC OCEAN. That differences of salinity in different parts of the same ocean are largely due to meteorological controls has long been known. Thus, in the trade wind belts, with abundant evaporation, the salinity is greater than it is in the doldrum belt, with its heavy rainfall and cloudy skies. A recent discussion of the problem of the salinity of the oceans, by Dr. Alexander Woeikow ("Der Salzgehalt der Meere und seine Ursachen," *Pet. Mitt.*, Jan. and Feb., 1912), brings forward an interesting explanation of the differences in salinity between the three great oceans. This explanation rests largely upon meteorological controls, and in view of the thorough study which the author is known to have given to this whole subject the paper is worthy of attention.

The greater salinity of the Atlantic as compared with that of either of the other oceans, which exists in spite of the fact that the continental areas which drain into the Atlantic are larger than those in the case of the Pacific and Indian Oceans, is explained as follows: The mountain ranges bordering upon the Atlantic are neither high nor very extended. The water vapor, from evaporation over the Atlantic, is carried far into the continents, and a large part of the resulting precipitation does not return to the Atlantic. Thus, for example, in the case of Eurasia, Woeikow points out that under the influence of the upper and lower westerly winds, and also partly of that of the southerly winds, the water vapor from the Atlantic and its mediterranean seas is carried beyond the Atlantic drainage areas. In Turkestan, balloon and kite observations show the prevalence of westerly winds of considerable velocity a short distance above sea-level. This fact leads to the belief that the water vapor which is precipitated as rain or snow in the Tian Shan is derived from the Mediterranean. From the Atlantic directly there may even be a transportation of water vapor, in the anti-trades, far to the east. The Sahara, also, receives and does not give back, a supply of water from the Atlantic. The loss of water vapor thus brought about, and not compensated by an equivalent inflow of water in rivers, is thought by Woeikow to be the principal cause of the great salinity of the Atlantic. In the Pacific and Indian Oceans the weather does not find a similar loss of water vapor, owing largely to the better enclosure of these oceans by the higher altitudes of the surrounding continents. The Atlantic Ocean thus experiences a definite loss. Dr. Woeikow knows the meteorology of the Aralo-Caspian area so thoroughly that his explanation of the transportation of Atlantic water vapor into that region must be received with serious attention. It is, in the nature of the case, impossible to give any definite proof of the correctness of the theory. A map of the salinity of the oceans, of the altitudes of the continental margins, and of the drainage areas accompanies the article.

R. DEC. WARD.

OBITUARY

ARTHUR DE CLAPARÈDE. Prof. de Claparède, eleven times President since 1891 of the Geographical Society of Geneva, Switzerland, died on Dec. 13, 1911. He was born in 1852, and though never in robust health, he traveled extensively and for many years, was widely known as a writer on geographical and economic topics. He was among the leaders of the development of geographical education in Switzerland. He was President of the Ninth International Geographical Congress at Geneva in 1908 and represented Switzerland in 1904 at the Eighth Congress in the United States.

A. H. KEANE. Dr. A. H. Keane, the anthropologist, died in Hampstead, England, on Feb. 3, 1912. He was born in Cork in 1835. He was not a field worker, but his literary training and wide knowledge of languages especially fitted him for collation and synthesis. He wrote many admirable monographs and a number of books on geographical and anthropological topics. Among his best-known works are his "Ethnology" (1896), "Man Past and Present (1899), and "The World's Peoples" (1908). The usefulness of his work is largely due to the vast extent of his reading and his systematic method in arranging and presenting the observations of field students.

CORRESPONDENCE

MAP READING

To the American Geographical Society: A recent magazine article on "Maps and Map Making" refers to the little knowledge of map reading among our students and the failure to teach the subject in our schools. In supplying the U. S. Geological Survey sheets to local schools I have found them little appreciated. It is enjoyable to travel with good maps in hand; and on auto or bicycle tours at home and in England, France, Italy and Switzerland, my pleasure and profit have been much enhanced by using the excellent maps of those countries. As a traveler, I know that one sees only what his intelligence, education and training fit him to appreciate and understand. I greatly regret that our schools are so slow in taking up the subject of teaching their students how to get all the information that really good maps supply to those who can read them.

HENRY N. FRANCIS, Am. Soc. C. E.,
Providence, R. I., Feb. 23, 1912.

MOUNT TACOMA

To the American Geographical Society: I enclose a newspaper clipping relative to an application to the U. S. Geographic Board in Washington asking that the old name of Mount Tacoma be restored. It is regrettable that the old Indian name should have been taken away and replaced by that of an unknown foreigner, mainly on account of the rivalry of two cities. I was there in 1882. At that time Tacoma and Seattle were great rivals, Tacoma slightly leading in population. Everybody in Tacoma called the mountain "Tacoma," but Seattle hated the name as it was her rival's and spoke of it only as Mt. Ranier. As Seattle later became a great railroad terminus and grew to be larger than Tacoma, the name Mt. Ranier became fixed and the railroads naturally published it in their guide-books and time-tables. It has seemed to many persons wrong to take away the Indian name and I am very glad if a movement is on foot to have it restored.

WILLIAM BOERUM WETMORE,
Allenhurst, N. J., Feb. 5, 1912.